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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,066	10/14/2003	Rolf Bruck	E-80111	4376
24131	7590	05/04/2004	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			NGUYEN, TU MINH	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,066

Applicant(s)

BRÜCK, ROLF

Examiner

Tu M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6, 11-13, 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 14-16, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 101403.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. An Applicant's Preliminary Amendment filed on October 14, 2003 has been entered. Claim 5 has been amended. Overall, claims 1-20 are pending in this application.

Election/Restriction

2. Applicant's election of the invention of the species of Figure 1 in an Applicant's Response to an Election/Restriction Requirement mailed on April 5, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-5, 7-10, 14-16, 19, and 20 are readable thereon and will be examined in their full merit. Claims 6, 11-13, 17, and 18 are withdrawn from further consideration by the examiner, 37 CAR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1-3, 5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki (U.S. Patent 5,711,149).

Re claims 1-2, as illustrated in Figure 1, Araki discloses an exhaust system for purifying exhaust gas flowing from an automobile diesel internal combustion engine (1) through the exhaust system in a flow direction, the exhaust system comprising, successively in the flow direction:

- a catalytic converter (7) (lines 40-45 of column 7),
- an oxidation catalytic converter (5), and
- a particulate trap (4) for collecting particulates contained in the exhaust gas.

Re claim 3, in the system of Araki, the catalytic converter (7) converts carbon monoxides and hydrocarbons contained in the exhaust gas, and the oxidation catalytic converter (5) converts nitrogen monoxide contained in the exhaust gas.

Re claim 5, in the system of Araki, the catalytic converter (7) is disposed at the underbody of an automobile.

Re claim 8, in the system of Araki, the particulate trap (4) is disposed directly downstream of the oxidation catalytic converter (5), in the flow direction.

5. Claims 1-4, 8, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Minami (U.S. Patent Application 2002/0174648).

Re claims 1-2, as shown in Figures 1-2, Minami discloses an exhaust system for purifying exhaust gas flowing from an automobile diesel internal combustion engine (2) through the exhaust system in a flow direction, the exhaust system comprising, successively in the flow direction:

- a catalytic converter (131),
- an oxidation catalytic converter (121), and
- a particulate trap (122) for collecting particulates contained in the exhaust gas.

Re claim 3, in the system of Minami, the catalytic converter (131) converts carbon monoxides and hydrocarbons contained in the exhaust gas, and the oxidation catalytic converter (121) converts nitrogen monoxide contained in the exhaust gas (lines 11-13 of paragraph 0007).

Re claim 4, the system of Minami further comprises a turbocharger (8), the catalytic converter (131) disposed upstream of the turbocharger, and the oxidation catalytic converter (121) disposed downstream of the turbocharger, in the flow direction.

Re claim 8, in the system of Minami, the particulate trap (122) is disposed directly downstream of the oxidation catalytic converter (121), in the flow direction.

Re claim 19, in the system of Minami, the oxidation catalytic converter (121) has a catalytic converter volume, and the catalytic converter (131) has a converter volume of at most half of the catalytic converter volume of the oxidation catalytic converter (see paragraph 0034).

Re claim 20, in the system of Minami, the oxidation catalytic converter (121) has a honeycomb structure formed of at least partially structured metal foils defining passages through which exhaust gas can flow (lines 5-11 of paragraph 0007).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7, 14-16 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki or Minami as applied to claims 1 and 8, respectively, above, in view of legal precedent.

Re claim 7, the system of Araki or Minami discloses the invention as cited above, however, fails to disclose that the oxidation catalytic converter has at least two zones including a zone disposed furthest away from the internal combustion engine and at least one remaining zone, and the zone disposed furthest away from the internal combustion engine has a higher specific heat capacity than the at least one remaining zone.

Araki or Minami discloses the claimed invention except for forming the oxidation catalytic converter into at least two zones. It would have been obvious to one having ordinary skill in the art at the time the invention was made to divide the oxidation catalytic converter into two zones, wherein the downstream zone is larger in size so that the downstream zone has a higher heat capacity than the upstream zone, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Re claims 9-10 and 14-16, the system of Araki or Minami discloses the invention as cited above, however, fails to disclose that the particulate trap is disposed at a distance of less than 50 or 20 mm from the oxidation catalytic converter; and that the particulate trap has a total volume of less than 75%, 50%, or 25% of the volumetric capacity of the internal combustion engine.

Araki or Minami discloses the claimed invention except for specifying an optimum distance of separation between the particulate trap and the oxidation catalytic converter; and for specifying an optimum total volume for the particulate trap in term of the volumetric capacity of the engine. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum distance of separation between the particulate trap and the oxidation catalytic converter and to provide a specific optimum total volume of the particulate trap relative to a volumetric capacity of the engine, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Prior Art

8. The IDS (PTO-1449) filed on October 14, 2003 has been considered. An initialized copy is attached hereto.
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of four patents and one patent application: Maus (U.S. Patent 5,839,273), Voss et al. (U.S. Patent 5,987,882), Brück et al. (U.S. Patent 6,397,588), Salvat et al. (U.S.

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Patent 6,412,276), and Kato et al. (U.S. Patent Application 2002/0189247) further disclose a state of the art.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (703) 308-2833.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (703) 308-2623. The fax phone number for this group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1148.

Tu M. Nguyen

TMN

Tu M. Nguyen

May 2, 2004

Patent Examiner

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